Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently amended) A method for adjusting a calibrating curve for a sensor calibration comprising:

        compiling a calibration array of data values relating to the sensor;

        generating a calibration curve;

        adjusting a nominal output current of the sensor based on data in the calibration array;

        adjusting the calibration curve based on the adjusted value of the nominal output current;

        wherein adjusting the calibration curve representing the sensor output further comprises performing a linear regression on data in the calibration array; and

        wherein a result of the linear regression determines a first calibration point.

2.   (Previously Presented) The method of Claim 1, wherein compiling the calibration array comprises compiling historical data.

3.   (Original) The method of Claim 2, wherein the historical data comprises measured blood glucose readings.

4.   (Previously Presented) The method of Claim 1, wherein compiling the calibration array comprises compiling recent data.

5.   (Original) The method of Claim 4, wherein the recent data comprises electrode readings.

6.   (Original) The method of Claim 5, wherein the electrode readings comprise glucose electrode readings and oxygen electrode readings.

7.   (Original) The method of Claim 4, wherein the recent data comprises measured blood glucose concentrations.

-2-

8.   (Original) The method of Claim 7, wherein the nominal output current is a nominal glucose current.

9.   (Original) The method of Claim 8, wherein the nominal glucose current is adjusted based on a shift of measured data points with respect to blood glucose readings.

10.   (Original) The method of Claim 9, wherein the shift is a mean shift.

11.   (Cancelled).

12.   (Cancelled).

13.   (Original) The method of Claim 12, wherein the first calibration point is used to determine a plurality of calibration points.

14.   (Previously Presented) The method of Claim 1, wherein adjusting the calibration curve representing the sensor output comprises adjusting the calibration curve in a piecewise linear fashion.

15.   (Original) The method of Claim 14, wherein a number of pieces in the piecewise linear adjustment is five.

16.   (Currently Amended) The method of Claim 1, further comprising compiling a second calibration array of data values relating to the sensor: adjusting the nominal output current of the sensor a second time based on data in the second calibration array.

17.   (Original) The method of Claim 16, wherein the nominal output current is a nominal glucose current.

18.   (Original) The method of Claim 17, wherein the nominal glucose current is adjusted based on a shift of measured data points with respect to blood glucose readings.

19.   (Original) The method of Claim 18, wherein the shift is a mean shift.

20.   (Currently Amended) The method of Claim 1, further comprising establishing a new sensor output based on the adjusted calibration curve and the twice adjusted ~~sensor parameter~~nominal output current.

21. – 33.   (Cancelled).

34.   (Previously presented) The method of Claim 1, wherein generating a calibration curve comprises generating a calibration curve based on a priori empirical values, and wherein the method further comprises:
        compiling a plurality of data values from the sensor;
        compiling independent historical values of a parameter sensed by the sensor; and
        reconciling the plurality of data values from the sensor to the calibration curve using the independent historical values.

35.   (Original) The method of Claim 34, wherein the sensor is a glucose sensor.

36.   (Original) The method of Claim 34, wherein generating a calibration curve comprises compiling *a priori* empirical values of sensors similar to the sensor being calibrated.

37.   (Currently Amended) ~~The method of Claim 34,~~ A method for adjusting a calibrating curve for a sensor calibration comprising:
        compiling a calibration array of data values relating to the sensor;
        generating a calibration curve;
        adjusting a nominal output current of the sensor based on data in the calibration array;

-4-

adjusting the calibration curve based on the adjusted value of the nominal output current;

wherein generating a calibration curve comprises generating a calibration curve based on a priori empirical values, and wherein the method further comprises:

compiling a plurality of data values from the sensor;

compiling independent historical values of a parameter sensed by the sensor; and

reconciling the plurality of data values from the sensor to the calibration curve using the independent historical values;

wherein generating a calibration curve comprises generating a calibration curve representing a sensor having a plurality of phases.

38.   (Original) The method of Claim 34, wherein the independent historical values of a parameter sensed by the sensor are metered blood glucose values.

39.   (Original) The method of Claim 34, wherein reconciling the plurality of data values comprises adjusting an output current of the sensor.

40.   (Original) The method of Claim 39, wherein the output current of the sensor is a nominal glucose current.

41.   (Original) The method of Claim 40, wherein the nominal glucose current is adjusted based on a shift of the plurality of data values from the sensor with respect to metered blood glucose values.

42.   (Original) The method of Claim 34, wherein reconciling the plurality of data values comprises performing a linear regression on the plurality of data values.

43.   (Original) The method of Claim 34, wherein reconciling the plurality of data values is performed in a piecewise linear fashion.